

Approved For Release 1999/09/02 : CIA-RDP79-01093A000300050005-6

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~~SECURITY INFORMATION~~
Office Memorandum • UNITED STATES GOVERNMENT

TO : AD/RR

DATE: 11 February 1953

FROM : OCh/R

SUBJECT: Critique of CIA/RR PR-22 (ORR Project 58-51) "Production and Consumption of Aluminum in the Soviet Bloc"

1. The introductory three pages describing six different processes for producing alumina from Bauxite, all of which rely generally on the same principle, could be condensed to one paragraph emphasizing, for example, the Bayer process. Table I on inputs shows five different but similar versions of inputs for the Bayer process and these likewise could be condensed. The elementary chemistry (with some more or less minor errors) could be dispensed with largely.

2. The estimates on production of primary aluminum in the USSR are stated to be obtained from "PW reports, defector's reports, [REDACTED] Press statements" etc. However, since most of the estimates being the same (or nearly so) as IM-181 published in 1949, some reference should have been made to the latter particularly in view of further questions raised below.

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	<u>Thousands of Metric Tons</u>				
	<u>1948</u>	<u>1949</u>	<u>1950</u>	<u>1951</u>	<u>1952</u>
PR-22	135	155	170	200	232.5
IM-181	125	145	170	200	225.0

The production for 1955 is also given as 440 thousand metric tons with the explanation that it is based on the Fourth* Five Year Plan production by multiplying the 1950 production (170 thousand metric tons) by 2.5. This fixes the 1950 and 1955 production in the stated assumptions. The 1951 and 1952 productions must, therefore, ^{have been} arbitrarily taken from IM-181 which likewise fixes the 1953 and 1954 estimated production as well as the rate of increase on a highly arbitrary basis. These matters should have been explained and alternate courses set forth.

3. With regard to the estimates of secondary aluminum comprising new and old scrap, it is believed that the figure for the new scrap may be estimated with some degree of accuracy based on production of primary aluminum. It is highly doubtful if any such relationship exists for old scrap and this figure must therefore be estimated from a time series or data obtained from direct sources.

4. The estimates on consumption are admittedly arbitrary and are, therefore, open to considerable question. The introduction to this subject in the report states: "Since such a lack of accurate information was encountered, the approach was taken of obtaining estimated aluminum consumptions by various consuming industries, adding a more or less arbitrary factor based on the assumption that estimates of a particular industry would tend to underestimate rather than overestimate aluminum consumption and totalling the results".

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Recasting the distribution pattern shown in the report on a basis of a total of 100% for industry, transportation and household use by disregarding the 43.6% allocated to the military gives the following picture.

	<u>Percent</u>
Iron and Steel	9.5
Transportation	19.4
Electrical Production and Tool Industries	32.3
Household Use	19.4
Other	19.4
	<u>100.0</u>

Inspection of the above figures definitely shows that they are not related to the US distribution pattern and since the USSR pattern was admittedly unknown the result is arbitrary as also admitted. The total consumption of 229.5 thousand metric tons shown for 1952-3 is likewise for the same reason entirely arbitrary. The military consumption comprising 43.6% of the total consumption would amount, on this basis, to 100 thousand metric tons. (The estimates in IM-181 shows about one-fourth of this amount assigned to the military as estimated by our own services). Converted to an average and roughly assumed airframe weight would show an unbelievable and disproportionately large number of aircraft produced in the same year. Moreover, the surplus or reserve and the stockpiling situation shown in the balance statement would likewise be in error to the extent of the error in the above assumption.

5. Review of the material input side should be made particularly with respect to caustic soda and carbon both of which appear low based on available data.

6. Too much emphasis is put upon the illegal purchases and particularly in the circuitous conclusions especially in view of the total being estimated at less than 4% and the admission that even the computation of this figure may contain a certain amount of duplication.

7. The statement regarding the "extreme vulnerability" of the aluminum industry from the view point of supply of electric energy also appears over-emphasized. While inspection of Table 3 shows a concentration of about half the production in Economic region VIII, this production in turn is divided about equally in two different locations and the others are somewhat scattered. The statement that "aluminum in the USSR is produced by means of expensive thermally generated electric power at Kamensk - Ural'skiy" obviously is incomplete. The total electric power consumed by the aluminum industry is less than 5% of the total and not only are the thermal electric plants relatively small in comparison with the hydro-electric plants, but are likewise somewhat scattered. World War II experience shows that some of these plants were moved in the overrun areas.

8. The above questions are intended to be illustrative and not exhaustive as there are obviously more which could be raised on extensive examination.